

Section 4. Natural Gas

Total dry natural gas production in the United States during February 2003 was forecast as 1.5 trillion cubic feet, 2 percent higher than production during February 2002.

Consumption of natural and supplemental gas in February 2003 was forecast as 2.4 trillion cubic feet, 8 percent higher than the level in February 2002.

Deliveries to residential consumers in February 2003 were forecast as 824 billion cubic feet, 17 percent higher than the previous February's deliveries. Total deliveries to industrial consumers during February 2003 were forecast as 781 billion cubic feet, 5 percent higher than the previous February's level.

Net imports of natural gas in February 2003 were forecast as 244 billion cubic feet, 11 percent lower than net imports in the previous February.

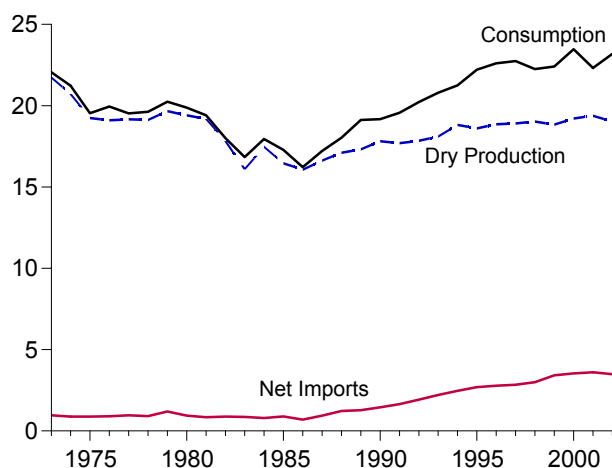
Stocks of working gas¹ in underground natural gas storage reservoirs at the end of February 2003 were 864 billion cubic feet, 53 percent lower than the level of stocks available 1 year earlier.

Net withdrawals from underground storage during February 2003 were 676 billion cubic feet, 46 percent higher than the amount of net withdrawals during February 2002.

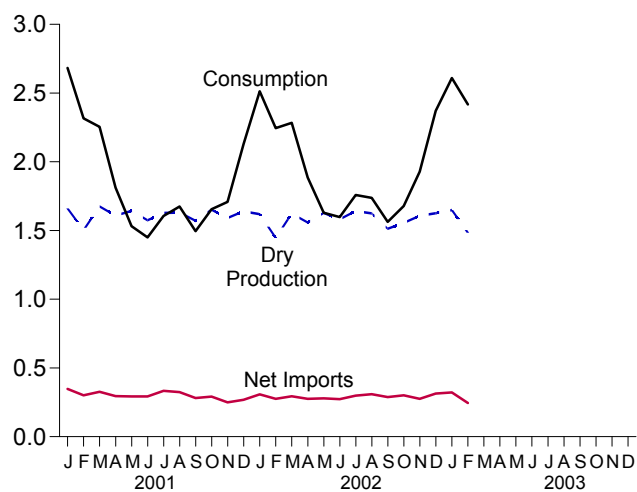
¹Gas available for withdrawal.

Figure 4.1 Natural Gas
(Trillion Cubic Feet)

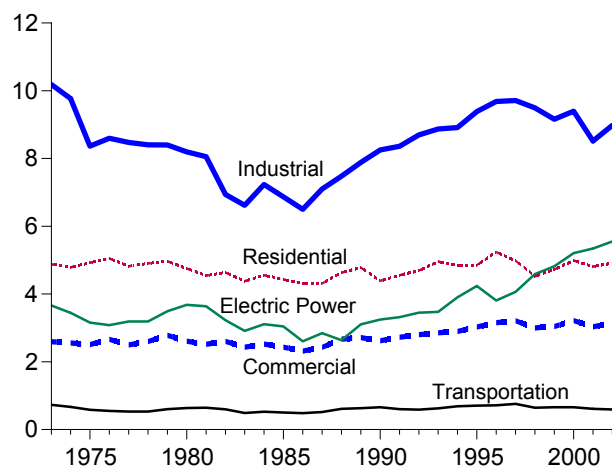
Overview, 1973-2002



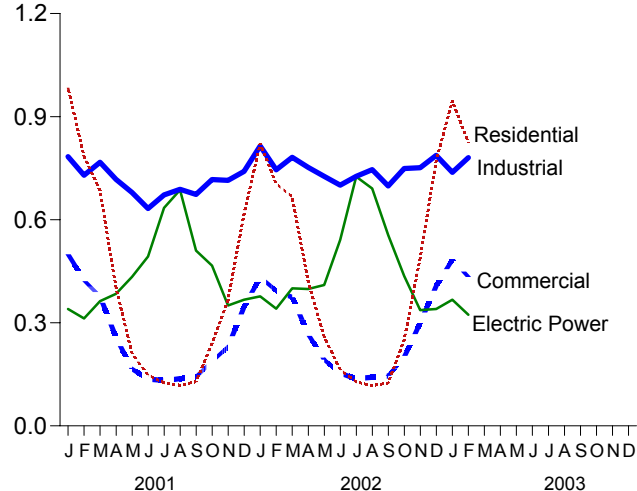
Overview, Monthly



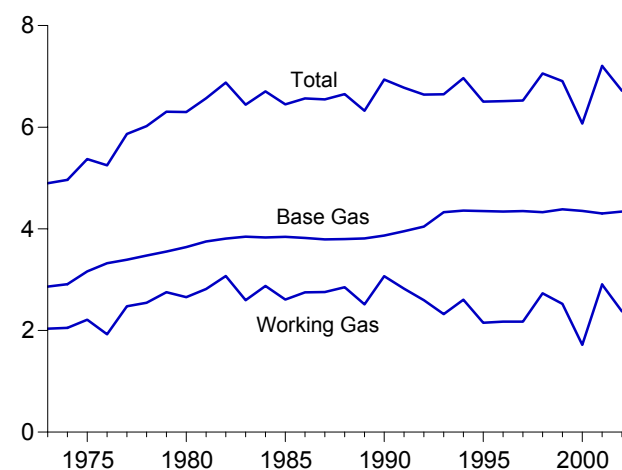
Consumption by Sector, 1973-2002



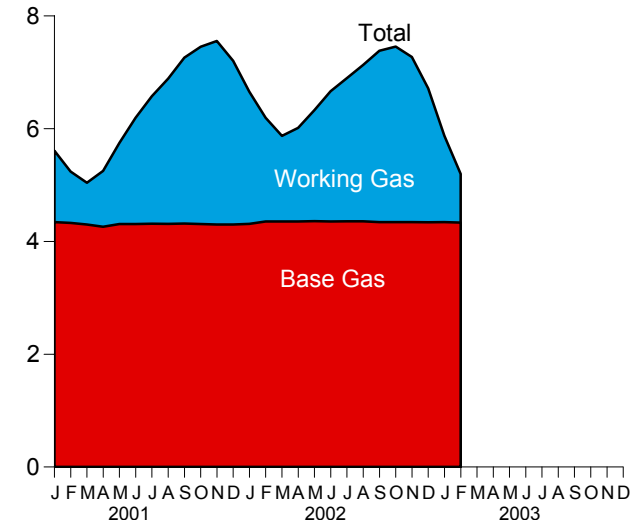
Consumption by Sector, Monthly



Underground Storage, End of Year, 1973-2002



Underground Storage, End of Month



Note: Because vertical scales differ, graphs should not be compared.
Web Page: <http://www.eia.doe.gov/emeu/mer/natgas.html>.
Sources: Tables 4.1, 4.4, and 4.5.

Table 4.1 Natural Gas Overview
(Billion Cubic Feet)

	Dry Gas Production ^a	Supplemental Gaseous Fuels ^b	Imports	Exports	Withdrawals From Storage ^c	Additions to Storage ^c	Balancing Item ^d	Consumption ^e
1973 Total	^f 21,731	NA	1,033	77	1,533	1,974	-196	22,049
1974 Total	^f 20,713	NA	959	77	1,701	1,784	-289	21,223
1975 Total	^f 19,236	NA	953	73	1,760	2,104	-235	19,538
1976 Total	^f 19,098	NA	964	65	1,921	1,756	-216	19,946
1977 Total	^f 19,163	NA	1,011	56	1,750	2,307	-41	19,521
1978 Total	^f 19,122	NA	966	53	2,158	2,278	-287	19,627
1979 Total	^f 19,663	NA	1,253	56	2,047	2,295	-372	20,241
1980 Total	19,403	155	985	49	1,972	1,949	-640	19,877
1981 Total	19,181	176	904	59	1,930	2,228	-500	19,404
1982 Total	17,820	145	933	52	2,164	2,472	^d -537	18,001
1983 Total	16,094	132	918	55	2,270	1,822	^d -703	16,835
1984 Total	17,466	110	843	55	2,098	2,295	-217	17,951
1985 Total	16,454	126	950	55	2,397	2,163	-428	17,281
1986 Total	16,059	113	750	61	1,837	1,984	-493	16,221
1987 Total	16,621	101	993	54	1,905	1,911	-444	17,211
1988 Total	17,103	101	1,294	74	2,270	2,211	-453	18,030
1989 Total	17,311	107	1,382	107	2,854	2,528	101	^g 19,119
1990 Total	17,810	123	1,532	86	1,986	2,499	307	^g 19,174
1991 Total	17,698	113	1,773	129	2,752	2,672	27	^g 19,562
1992 Total	17,840	118	2,138	216	2,772	2,599	176	^g 20,228
1993 Total	18,095	119	2,350	140	2,799	2,835	401	20,790
1994 Total	18,821	111	2,624	162	2,579	2,865	139	21,247
1995 Total	18,599	110	2,841	154	3,025	2,610	396	22,207
1996 Total	18,854	91	2,937	153	2,981	2,979	878	22,609
1997 Total	18,902	77	2,994	157	2,894	2,870	897	22,737
1998 Total	19,024	80	3,152	159	2,432	2,961	679	22,246
1999 Total	18,832	82	3,586	163	2,808	2,636	-103	22,405
2000 Total	19,212	84	3,782	244	3,550	2,721	-192	23,471
2001 January	^E 1,661	8	373	26	^E 588	^E 92	171	2,683
February	^E 1,502	7	328	27	^E 414	^E 74	167	2,316
March	^E 1,675	7	358	32	^E 298	^E 116	64	2,255
April	^E 1,609	6	319	24	^E 70	^E 349	182	1,812
May	^E 1,643	5	322	29	^E 41	^E 520	69	1,532
June	^E 1,574	5	317	25	^E 49	^E 490	18	1,450
July	^E 1,628	7	365	31	^E 66	^E 451	23	1,606
August	^E 1,631	6	353	29	^E 79	^E 386	21	1,674
September	^E 1,571	6	315	34	^E 41	^E 413	10	1,496
October	^E 1,651	6	326	34	^E 93	^E 282	-105	1,655
November	^E 1,590	7	291	42	^E 138	^E 210	-66	1,708
December	^E 1,640	8	310	42	^E 432	^E 80	-138	2,129
Total	19,375	77	3,977	373	^E 2,309	^E 3,464	416	22,316
2002 January	^E 1,619	^E 8	343	34	^E 605	^E 59	^R 31	^R 2,512
February	^E 1,447	^E 7	305	30	^E 517	^E 55	54	2,245
March	^E 1,623	^E 8	332	38	^E 425	^E 105	39	2,284
April	^E 1,558	^E 6	315	39	^E 111	^E 237	172	1,886
May	^E 1,628	^E 6	319	39	^E 68	^E 381	40	1,630
June	^E 1,582	^E 5	317	45	^E 56	^E 395	77	1,598
July	^E 1,642	^E 7	344	45	^E 101	^E 341	49	1,758
August	^E 1,625	^E 7	355	47	^E 89	^E 322	30	1,737
September	^E 1,513	^E 6	335	47	^E 72	^E 364	47	1,562
October	^E 1,556	^E 7	343	42	^E 145	^E 229	-101	1,678
November	^E 1,607	^E 7	330	55	^E 322	^E 124	-160	1,928
December	^E 1,626	^E 8	369	55	^E 624	^E 66	-136	^R 2,371
Total	19,026	80	4,008	516	^E 3,126	^E 2,679	^R 143	^R 23,189
2003 January	^{RE} 1,649	^{RE} 8	367	45	^E 886	^E 44	^R -210	^R 2,609
February	^F 1,483	^F 6	^E 305	^E 61	^E 723	^E 48	^E 8	^F 2,417
2-Month Total	^E 3,132	^E 14	^E 672	^E 106	^E 1,609	^E 92	^E -203	^E 5,026
2002 2-Month Total	^E 3,066	^E 15	648	65	^E 1,122	^E 114	85	4,757
2001 2-Month Total	^E 3,163	15	701	52	^E 1,001	^E 166	338	4,999

^a "Marketed Production (Wet)" minus "Extraction Loss." See Table 4.2.

^b See Note 1 at end of section.

^c Data for 1980-2000 cover underground storage and liquefied natural gas storage. All other time periods cover underground storage only. See Note 2 at end of section.

^d See Note 3 at end of section. Since 1980, excludes transit shipments that cross the U.S.-Canada border (i.e., natural gas delivered to its destination via the other country).

^e See Note 4 at end of section.

^f May include unknown quantities of nonhydrocarbon gases.

^g For 1989-1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector" on Table 4.4. See Note 5 at end of section.

R=Revised, E=Estimate, NA=Not available, F=Forecast.

Notes: • Totals may not equal sum of components due to independent rounding.

• Geographic coverage is the 50 States and the District of Columbia.

Web Page: <http://www.eia.doe.gov/emeu/mer/natgas.html>.

Sources: • **Dry Gas Production: 1973-1995:** Energy Information Administration (EIA), *Natural Gas Annual 2000*, Table 94. **1996 forward:** EIA, *Natural Gas Monthly*, March 2003, Table 2. • **Supplemental Gaseous Fuels: 1980-1995:** EIA, *Natural Gas Annual*, annual reports. **1996 Forward:** EIA, *Natural Gas Monthly*, March 2003, Table 2. • **Imports and Exports:** Table 4.3.

• **Withdrawals From Storage and Additions to Storage: 1973-1996:** EIA, *Natural Gas Annual 2000*, Table 94. **1997-2000:** EIA, *Natural Gas Annual 2001*, Table 1. **2001 forward:** Table 4.5. • **Consumption:** Table 4.4. • **Balancing Item:** Calculated as the sum of consumption, exports, and additions to storage minus dry gas production, supplemental gaseous fuels, imports, and withdrawals from storage. • **Forecast values:** EIA, Short-Term Integrated Forecasting System. See Note 10 at end of section.

In the April 2003 *Monthly Energy Review*, Table 4.1 was redesigned with separate columns for "Imports" and "Exports" (replacing "Net Imports") and separate columns for "Withdrawals From Storage" and "Additions to Storage" (replacing "Net Withdrawals From Storage"). Also, "Consumption" data were revised for 1993 forward; see Table 4.4 and Appendix D for more information.

Table 4.2 Natural Gas Production
(Billion Cubic Feet)

	Gross Withdrawals ^a	Repressuring ^b	Nonhydrocarbon Gases Removed ^c	Vented and Flared ^d	Marketed Production ^e	Extraction Loss ^f	Dry Gas Production ^g
1973 Total	24,067	1,171	NA	248	^h 22,648	917	^h 21,731
1974 Total	22,850	1,080	NA	169	^h 21,601	887	^h 20,713
1975 Total	21,104	861	NA	134	^h 20,109	872	^h 19,236
1976 Total	20,944	859	NA	132	^h 19,952	854	^h 19,098
1977 Total	21,097	935	NA	137	^h 20,025	863	^h 19,163
1978 Total	21,309	1,181	NA	153	^h 19,974	852	^h 19,122
1979 Total	21,883	1,245	NA	167	^h 20,471	808	^h 19,663
1980 Total	21,870	1,365	199	125	20,180	777	19,403
1981 Total	21,587	1,312	222	98	19,956	775	19,181
1982 Total	20,272	1,388	208	93	18,582	762	17,820
1983 Total	18,659	1,458	222	95	16,884	790	16,094
1984 Total	20,267	1,630	224	108	18,304	838	17,466
1985 Total	19,607	1,915	326	95	17,270	816	16,454
1986 Total	19,131	1,838	337	98	16,859	800	16,059
1987 Total	20,140	2,208	376	124	17,433	812	16,621
1988 Total	20,999	2,478	460	143	17,918	816	17,103
1989 Total	21,074	2,475	362	142	18,095	785	17,311
1990 Total	21,523	2,489	289	150	18,594	784	17,810
1991 Total	21,750	2,772	276	170	18,532	835	17,698
1992 Total	22,132	2,973	280	168	18,712	872	17,840
1993 Total	22,726	3,103	414	227	18,982	886	18,095
1994 Total	23,581	3,231	412	228	19,710	889	18,821
1995 Total	23,744	3,565	388	284	19,506	908	18,599
1996 Total	24,114	3,511	518	272	19,812	958	18,854
1997 Total	24,213	3,492	599	256	19,866	964	18,902
1998 Total	24,108	3,427	617	103	19,961	938	19,024
1999 Total	23,823	3,293	615	110	19,805	973	18,832
2000 Total	24,332	3,374	617	100	20,241	1,028	19,212
2001 January	^E 2,119	^E 313	^E 50	^E 7	^E 1,750	^E 89	^E 1,661
February	^E 1,918	^E 289	^E 40	^E 6	^E 1,582	^E 80	^E 1,502
March	^E 2,152	^E 336	^E 45	^E 7	^E 1,765	^E 90	^E 1,675
April	^E 2,051	^E 305	^E 44	^E 7	^E 1,695	^E 86	^E 1,609
May	^E 2,082	^E 300	^E 43	^E 7	^E 1,731	^E 88	^E 1,643
June	^E 1,992	^E 284	^E 43	^E 7	^E 1,659	^E 84	^E 1,574
July	^E 2,054	^E 285	^E 46	^E 8	^E 1,716	^E 87	^E 1,628
August	^E 2,063	^E 292	^E 45	^E 8	^E 1,718	^E 87	^E 1,631
September	^E 1,980	^E 273	^E 45	^E 7	^E 1,655	^E 84	^E 1,571
October	^E 2,069	^E 275	^E 47	^E 8	^E 1,739	^E 88	^E 1,651
November	^E 2,049	^E 321	^E 45	^E 8	^E 1,675	^E 85	^E 1,590
December	^E 2,113	^E 335	^E 43	^E 7	^E 1,728	^E 88	^E 1,640
Total	^E 24,641	^E 3,609	^E 535	^E 86	^E 20,412	^E 1,037	^E 19,375
2002 January	^E 2,073	^E 325	^E 35	^E 7	^E 1,706	^E 87	^E 1,619
February	^E 1,865	^E 306	^E 28	^E 6	^E 1,524	^E 77	^E 1,447
March	^E 2,083	^E 335	^E 31	^E 7	^E 1,710	^E 87	^E 1,623
April	^E 1,993	^E 314	^E 30	^E 7	^E 1,642	^E 83	^E 1,558
May	^E 2,071	^E 318	^E 31	^E 7	^E 1,715	^E 87	^E 1,628
June	^E 2,006	^E 302	^E 31	^E 7	^E 1,667	^E 85	^E 1,582
July	^E 2,049	^E 280	^E 32	^E 7	^E 1,730	^E 88	^E 1,642
August	^E 2,048	^E 298	^E 31	^E 7	^E 1,712	^E 87	^E 1,625
September	^E 1,909	^E 278	^E 30	^E 7	^E 1,594	^E 81	^E 1,513
October	^E 1,995	^E 317	^E 32	^E 7	^E 1,639	^E 83	^E 1,556
November	^E 2,019	^E 286	^E 33	^E 7	^E 1,693	^E 86	^E 1,607
December	^E 2,059	^E 306	^E 33	^E 7	^E 1,713	^E 87	^E 1,626
Total	^E 24,171	^E 3,666	^E 377	^E 84	^E 20,045	^E 1,018	^E 19,026
2003 January	^{RE} 2,087	^{RE} 318	^{RE} 33	^{RE} 7	^{RE} 1,729	^{RE} 80	^{RE} 1,649
February	^F 1,885	^F 276	^F 39	^F 8	^F 1,563	^F 79	^F 1,483
2-Month Total	^E 3,972	^E 594	^E 72	^E 15	^E 3,292	^E 159	^E 3,132
2002 2-Month Total	3,938	631	63	14	3,230	164	3,066
2001 2-Month Total	4,036	602	90	13	3,332	169	3,163

^a Gas withdrawn from gas and oil wells.

^b The injection of natural gas into oil and gas formations for pressure maintenance and cycling purposes.

^c See Note 6 at end of section.

^d Vented: Natural gas released into the air on the base site or at processing plants. Flared: Natural gas burned in flares on the base site or at gas processing plants.

^e "Gross Withdrawals" minus "Repressuring," "Nonhydrocarbon Gases Removed," and "Vented and Flared." See Note 7 at end of section.

^f See Note 8 at end of section.

^g "Marketed Production (Wet)" minus "Extraction Loss."

^h May include unknown quantities of nonhydrocarbon gases.

R=Revised. NA=Not available. E=Estimate. F=Forecast.

Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 States and the District of Columbia.

Web Page: <http://www.eia.doe.gov/emeu/mer/natgas.html>.

Sources: • 1973-1995: Energy Information Administration (EIA), *Natural Gas Annual 2000*, Table 93. • 1996 forward: EIA, *Natural Gas Monthly*, April 2003, Table 1. • Forecast values: EIA, Short-Term Integrated Forecasting System. See Note 10 at end of section.

Table 4.3 Natural Gas Trade by Country
(Billion Cubic Feet)

	Imports								Exports			
	Algeria ^a	Australia ^a	Canada ^b	Mexico ^b	Qatar ^a	Trinidad and Tobago ^a	Other ^c	Total	Canada ^b	Japan ^a	Mexico ^b	Total
1973 Total	3	0	1,028	2	0	0	0	1,033	15	48	14	77
1974 Total	0	0	959	(s)	0	0	0	959	13	50	13	77
1975 Total	5	0	948	0	0	0	0	953	10	53	9	73
1976 Total	10	0	954	0	0	0	0	964	8	50	7	65
1977 Total	11	0	997	2	0	0	0	1,011	(s)	52	4	56
1978 Total	84	0	881	0	0	0	0	966	(s)	48	4	53
1979 Total	253	0	1,001	0	0	0	0	1,253	(s)	51	4	56
1980 Total	86	0	797	102	0	0	0	985	(s)	45	4	49
1981 Total	37	0	762	105	0	0	0	904	(s)	56	3	59
1982 Total	55	0	783	95	0	0	0	933	(s)	50	2	52
1983 Total	131	0	712	75	0	0	0	918	(s)	53	2	55
1984 Total	36	0	755	52	0	0	0	843	(s)	53	2	55
1985 Total	24	0	926	0	0	0	0	950	(s)	53	2	55
1986 Total	0	0	749	0	0	0	2	750	9	50	2	61
1987 Total	0	0	993	0	0	0	0	993	3	49	2	54
1988 Total	17	0	1,276	0	0	0	0	1,294	20	52	2	74
1989 Total	42	0	1,339	0	0	0	0	1,382	38	51	17	107
1990 Total	84	0	1,448	0	0	0	0	1,532	17	53	16	86
1991 Total	64	0	1,710	0	0	0	0	1,773	15	54	60	129
1992 Total	43	0	2,094	0	0	0	0	2,138	68	53	96	216
1993 Total	82	0	2,267	2	0	0	0	2,350	45	56	40	140
1994 Total	51	0	2,566	7	0	0	0	2,624	53	63	47	162
1995 Total	18	0	2,816	7	0	0	0	2,841	28	65	61	154
1996 Total	35	0	2,883	14	0	0	5	2,937	52	68	34	153
1997 Total	66	10	2,899	17	0	0	2	2,994	56	62	38	157
1998 Total	69	12	3,052	15	0	0	5	3,152	40	66	53	159
1999 Total	76	12	3,368	55	20	51	5	3,586	39	64	61	163
2000 Total	47	6	3,544	12	46	99	28	3,782	73	66	106	244
2001 January	5	0	352	2	0	11	2	373	12	6	8	26
February	8	0	305	1	0	7	8	328	15	4	8	27
March	8	0	333	1	2	11	3	358	19	6	7	32
April	5	0	294	2	2	8	7	319	13	6	5	24
May	8	0	295	(s)	5	10	5	322	13	6	10	29
June	4	0	291	0	3	10	9	317	10	4	11	25
July	8	1	339	0	5	7	5	365	10	6	15	31
August	5	1	334	0	0	8	5	353	8	6	16	29
September	5	0	293	0	5	5	7	315	10	6	18	34
October	2	0	314	0	0	9	0	326	11	8	16	34
November	3	0	283	(s)	0	5	0	291	21	6	16	42
December	5	0	294	3	0	8	0	310	25	6	11	42
Total	65	2	3,729	10	23	98	50	3,977	167	66	141	373
2002 January	3	0	334	1	0	5	0	343	16	6	13	34
February	0	0	297	1	0	8	0	305	16	4	11	30
March	0	0	322	0	0	10	0	332	14	6	18	38
April	2	0	297	0	5	10	0	315	13	7	19	39
May	7	0	291	0	6	10	5	319	15	2	23	39
June	5	0	292	0	14	7	0	317	14	6	25	45
July	5	0	323	0	5	11	0	344	12	6	28	45
August	0	0	331	0	3	16	6	355	12	6	29	47
September	0	0	318	0	3	14	0	335	13	6	28	47
October	0	0	315	0	0	22	5	343	10	6	26	42
November	3	0	308	0	0	19	0	330	28	6	21	55
December	3	0	349	0	0	18	0	369	26	6	23	55
Total	27	0	3,777	2	35	151	16	4,008	189	63	263	516
2003 January	0	0	345	1	0	21	0	367	18	4	23	45
February	0	0	E 284	E 0	0	21	0	E 305	E 32	6	E 23	E 61
2-Month Total	0	0	E 629	E 1	0	42	0	E 672	E 50	10	E 46	E 106
2002 2-Month Total	3	0	631	2	0	13	0	648	32	9	23	65
2001 2-Month Total	13	0	658	4	0	17	10	701	27	9	16	52

^a As liquefied natural gas.

^b By pipeline, except for very small amounts of liquefied natural gas imported from Canada in 1973, 1977, and 1981 and exported to Mexico beginning in 1998. See Note 9 at end of section.

^c Liquefied natural gas imported from Indonesia in 1986 and 2000, the United Arab Emirates beginning in 1996, Malaysia in 1999, Nigeria beginning in 2000, Oman beginning in 2000 and Brunei beginning in 2002.

E=Estimate. (s)=Less than 500 million cubic feet.

Notes: • See Note 9 at end of section. • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 States and the District of Columbia.

Web Page: <http://www.eia.doe.gov/emeu/mer/natgas.html>.

Sources: • **1973-1996:** Energy Information Administration (EIA), Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas."
• **1997 forward:** EIA, *Natural Gas Monthly*, April 2003, Tables 5 and 6.

Table 4.4 Natural Gas Consumption by Sector
(Billion Cubic Feet)

	End-Use Sectors										Electric Power Sector ^{e,f}	Total
	Residential	Commercial ^a	Lease and Plant Fuel	Industrial			Total	Transportation				
				Other Industrial		Total		Pipeline Fuel ^d	Vehicle Fuel	Total		
				CHP ^b	Non-CHP ^c							
1973 Total	4,879	2,597	1,496	(9)	8,689	8,689	10,185	728	NA	728	3,660	22,049
1974 Total	4,786	2,556	1,477	(9)	8,292	8,292	9,769	669	NA	669	3,443	21,223
1975 Total	4,924	2,508	1,396	(9)	6,968	6,968	8,365	583	NA	583	3,158	19,538
1976 Total	5,051	2,668	1,634	(9)	6,964	6,964	8,598	548	NA	548	3,081	19,946
1977 Total	4,821	2,501	1,659	(9)	6,815	6,815	8,474	533	NA	533	3,191	19,521
1978 Total	4,903	2,601	1,648	(9)	6,757	6,757	8,405	530	NA	530	3,188	19,627
1979 Total	4,965	2,786	1,499	(9)	6,899	6,899	8,398	601	NA	601	3,491	20,241
1980 Total	4,752	2,611	1,026	(9)	7,172	7,172	8,198	635	NA	635	3,682	19,877
1981 Total	4,546	2,520	928	(9)	7,128	7,128	8,055	642	NA	642	3,640	19,404
1982 Total	4,633	2,606	1,109	(9)	5,831	5,831	6,941	596	NA	596	3,226	18,001
1983 Total	4,381	2,433	978	(9)	5,643	5,643	6,621	490	NA	490	2,911	16,835
1984 Total	4,555	2,524	1,077	(9)	6,154	6,154	7,231	529	NA	529	3,111	17,951
1985 Total	4,433	2,432	966	(9)	5,901	5,901	6,867	504	NA	504	3,044	17,281
1986 Total	4,314	2,318	923	(9)	5,579	5,579	6,502	485	NA	485	2,602	16,221
1987 Total	4,315	2,430	1,149	(9)	5,953	5,953	7,103	519	NA	519	2,844	17,211
1988 Total	4,630	2,670	1,096	(9)	6,383	6,383	7,479	614	NA	614	2,636	18,030
1989 Total	4,781	2,718	1,070	914	5,903	6,816	7,886	629	NA	629	^{f,h} 3,105	^h 19,119
1990 Total	4,391	2,623	1,236	1,055	5,963	^h 7,018	8,255	660	(s)	660	^h 3,245	^h 19,174
1991 Total	4,556	2,729	1,129	1,061	6,170	^h 7,231	8,360	601	(s)	602	^h 3,316	^h 19,562
1992 Total	4,690	2,803	1,171	1,107	6,420	^h 7,527	8,698	588	2	590	^h 3,448	^h 20,228
1993 Total	4,956	2,862	1,172	1,124	6,576	7,700	8,872	624	3	627	3,473	20,790
1994 Total	4,848	2,895	1,124	1,176	6,613	7,790	8,913	685	3	689	3,903	21,247
1995 Total	4,850	3,031	1,220	1,258	6,906	8,164	9,384	700	5	705	4,237	22,207
1996 Total	5,241	3,158	1,250	1,289	7,146	8,435	9,685	711	6	718	3,807	22,609
1997 Total	4,984	3,215	1,203	1,282	7,229	8,511	9,714	751	8	760	4,065	22,737
1998 Total	4,520	2,999	1,173	1,355	6,965	8,320	9,493	635	9	645	4,588	22,246
1999 Total	4,726	3,045	1,079	1,401	6,678	8,079	9,158	645	12	657	4,820	22,405
2000 Total	4,992	3,218	1,144	1,386	6,869	8,254	9,398	644	13	657	5,206	23,471
2001 January	984	500	99	111	573	684	783	74	E 1	76	340	2,683
February	784	424	89	99	541	640	730	64	E 1	65	313	2,316
March	685	376	100	108	559	667	767	62	E 1	63	363	2,255
April	402	257	96	101	521	622	718	50	E 1	51	385	1,812
May	210	166	98	104	478	581	679	41	E 1	43	434	1,532
June	148	137	94	106	433	539	633	38	E 1	40	493	1,450
July	125	132	97	114	461	575	672	42	E 1	43	634	1,606
August	118	137	97	119	473	592	689	42	E 1	44	687	1,674
September	129	143	93	113	468	580	674	38	E 1	40	510	1,496
October	240	187	98	115	504	619	717	43	E 1	44	466	1,655
November	366	230	95	109	511	620	715	45	E 1	46	351	1,708
December	617	347	98	116	527	643	741	57	E 1	58	367	2,129
Total	4,809	3,035	1,153	1,314	6,049	7,363	8,516	598	15	613	5,343	22,316
2002 January	821	433	E 96	112	606	718	815	65	E 1	67	^R 377	^R 2,512
February	704	394	E 86	101	558	659	745	59	E 1	60	341	2,245
March	666	375	E 97	111	574	685	782	59	E 1	61	400	2,284
April	419	266	E 93	100	560	659	752	48	E 1	49	399	1,886
May	259	193	E 97	107	522	629	726	41	E 1	42	410	1,630
June	164	153	E 94	108	499	606	701	38	E 1	39	541	1,598
July	128	137	E 98	121	507	629	726	40	E 1	41	725	1,758
August	117	142	E 97	119	530	649	746	40	E 1	41	691	1,737
September	125	146	E 90	111	498	608	698	37	E 1	38	555	1,562
October	250	200	E 93	100	556	656	749	41	E 1	43	436	1,678
November	489	301	E 96	95	560	656	751	49	E 1	50	337	1,928
December	773	408	E 97	92	598	690	787	62	E 1	63	340	^R 2,371
Total	4,915	3,147	1,133	1,278	6,568	7,846	8,979	580	15	595	^R 5,553	^R 23,189
2003 January	^R 946	^R 484	E 91	^R 106	^R 541	^R 647	^R 738	^R 73	E 1	^R 74	^R 367	^R 2,609
February	^F 824	^F 433	^F 91	^F 100	^F 590	^F 690	^F 781	^F 54	E 1	E 55	^F 324	^F 2,417
2-Month Total	^E 1,770	^E 917	^E 182	^E 206	^E 1,131	^E 1,337	^E 1,519	^E 127	E 2	^E 129	^E 691	^E 5,026
2002 2-Month Total	1,525	827	183	213	1,164	1,378	1,560	124	E 2	127	718	4,757
2001 2-Month Total	1,769	923	188	210	1,115	1,325	1,513	139	E 2	141	653	4,999

^a All commercial sector fuel use, including that at commercial combined-heat-and-power (CHP) and commercial electricity-only plants. See note at end of Section 7. See Table 7.3c for CHP fuel use.

^b Industrial combined-heat-and-power (CHP) and a small number of industrial electricity-only plants. See note at end of Section 7.

^c All industrial sector fuel use other than that in "Lease and Plant Fuel" and "CHP."

^d Natural gas consumed in the operation of pipelines, primarily in compressors.

^e The electric power sector comprises electricity-only and combined-heat-and-power (CHP) plants within the NAICS 22 category whose primary business is to sell electricity, or electricity and heat, to the public.

^f Through 1988, data are for consumption at electric utilities only. Beginning in 1989, data also include consumption at independent power producers.

^g Included in "Non-CHP."

^h For 1989-1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector." See Note 5 at end of section.

R=Revised. E=Estimate. NA=Not available. F=Forecast. (s)=Less than 500 million cubic feet.

Notes: • Natural gas includes supplemental gaseous fuels. • Totals may not equal sum of

components due to independent rounding. • Geographic coverage is the 50 States and the District of Columbia.

Web Page: <http://www.eia.doe.gov/emeu/mer/natgas.html>.

Sources: • **Residential, Lease and Plant Fuel, and Pipeline Fuel: 1973-1995:** Energy Information Administration (EIA), *Natural Gas Annual (NGA) 2000*, Table 95. **1996 forward:** EIA, *Natural Gas Monthly (NGM)*, April 2003, Table 3. • **Commercial: 1973-2000:** EIA, *NGA 2001*, 2001 forward: EIA, *NGM*, April 2003, Table 3. • **Other Industrial Total: 1973-1992:** EIA, *NGA 2000*, Table 95. **1993-forward:** EIA, Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers." • **Other Industrial CHP:** Table 7.3c. • **Electric Power Sector:** 1973-1988: Table 7.3e. 1989 forward: Table 7.3b. • **Vehicle Fuel: Annual Data, 1990 and 1991:** EIA, *NGA 2000*, Table 95. **1992-1995:** Science Applications International Corporation, "Alternative Transportation Fuels and Vehicles Data Development," unpublished final report prepared for EIA (McLean, VA, July 1996) and U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. **1996-2002:** EIA, Office of Coal, Nuclear, Electric, and Alternate Fuels. **Monthly Estimates:** Derived by dividing the annual value by the number of days in the year and then multiplying by the number of days in the month. • **All Other Series:** Calculated. • **Forecast values:** EIA, Short-Term Integrated Forecasting System.

In the April 2003 *Monthly Energy Review*, independent power producers' use of natural gas was moved from the industrial sector to a new electric power sector. Data for the new sector are derived from electricity collection forms, replacing that supplied on natural gas forms. As a result, total consumption was revised from 1993-2002. Also, data are now shown for industrial sector consumption by combined-heat-and-power (CHP) plants and non-CHP plants. For more information, see Appendix D.

Table 4.5 Natural Gas in Underground Storage
(Volumes in Billion Cubic Feet)

	Natural Gas in Underground Storage, End of Period			Change in Working Gas From Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^a	Volume	Percent	Withdrawals ^b	Injections ^b	Net ^c
1973 Total	2,864	2,034	4,898	305	17.6	1,533	1,974	-442
1974 Total	2,912	2,050	4,962	16	.8	1,701	1,784	-84
1975 Total	3,162	2,212	5,374	162	7.9	1,760	2,104	-344
1976 Total	3,323	1,926	5,250	-286	-12.9	1,921	1,756	165
1977 Total	3,391	2,475	5,866	549	28.5	1,750	2,307	-557
1978 Total	3,473	2,547	6,020	72	2.9	2,158	2,278	-120
1979 Total	3,553	2,753	6,306	207	8.1	2,047	2,295	-248
1980 Total	3,642	2,655	6,297	-99	-3.6	1,910	1,896	14
1981 Total	3,752	2,817	6,569	162	6.1	1,887	2,180	-293
1982 Total	3,808	3,071	6,879	255	9.0	2,094	2,399	-306
1983 Total	3,847	2,595	6,442	-476	-15.5	2,142	1,700	442
1984 Total	3,830	2,876	6,706	281	10.8	2,064	2,252	-188
1985 Total	3,842	2,607	6,448	-270	-9.4	2,359	2,128	231
1986 Total	3,819	2,749	6,567	142	5.5	1,812	1,952	-140
1987 Total	3,792	2,756	6,548	7	.3	1,881	1,887	-6
1988 Total	3,800	2,850	6,650	94	3.4	2,244	2,174	69
1989 Total	3,812	2,513	6,325	-337	-11.8	2,804	2,491	313
1990 Total	3,868	3,068	6,936	555	22.1	1,934	2,433	-499
1991 Total	3,954	2,824	6,778	-244	-8.0	2,689	2,608	80
1992 Total	4,044	2,597	6,641	-227	-8.0	2,724	2,555	168
1993 Total	4,327	2,322	6,649	-275	-10.6	2,717	2,760	-43
1994 Total	4,360	2,606	6,966	284	12.2	2,508	2,796	-288
1995 Total	4,349	2,153	6,503	-453	-17.4	2,974	2,566	408
1996 Total	4,341	2,173	6,513	19	.9	2,911	2,906	6
1997 Total	4,350	2,175	6,525	2	.1	2,824	2,800	24
1998 Total	4,326	2,730	7,056	554	25.5	2,379	2,905	-526
1999 Total	4,383	2,523	6,906	-207	-7.6	2,772	2,598	174
2000 Total	4,352	1,719	6,071	-806	-31.9	^E 3,498	^E 2,684	^E 814
2001 January	4,344	1,265	5,609	-495	-28.1	^E 588	^E 92	^E 496
February	4,328	912	5,241	-391	-30.0	^E 414	^E 74	^E 339
March	4,300	742	5,042	-412	-35.7	^E 298	^E 116	^E 183
April	4,261	992	5,253	-210	-17.5	^E 70	^E 349	^E -279
May	4,309	1,440	5,749	7	.5	^E 41	^E 520	^E -479
June	4,310	1,882	6,193	165	9.6	^E 49	^E 490	^E -441
July	4,315	2,261	6,576	258	12.9	^E 66	^E 451	^E -385
August	4,313	2,576	6,889	377	17.1	^E 79	^E 386	^E -307
September	4,318	2,944	7,262	450	18.0	^E 41	^E 413	^E -372
October	4,310	3,144	7,454	412	15.1	^E 93	^E 282	^E -190
November	4,301	3,254	7,555	812	33.2	^E 138	^E 210	^E -73
December	4,301	2,904	7,204	1,185	68.9	^E 432	^E 80	^E 352
Total	4,301	2,904	7,204	1,185	68.9	^E 2,309	^E 3,464	^E -1,156
2002 January	4,313	2,344	6,657	1,078	85.2	^E 605	^E 59	^E 546
February	4,356	1,838	6,194	925	101.4	^E 517	^E 55	^E 462
March	4,355	1,518	5,873	776	104.7	^E 425	^E 105	^E 320
April	4,355	1,659	6,014	666	67.1	^E 111	^E 237	^E -126
May	4,361	1,968	6,329	528	36.7	^E 58	^E 381	^E -323
June	4,355	2,308	6,663	426	22.6	^E 56	^E 395	^E -339
July	4,358	2,539	6,896	278	12.3	^E 101	^E 341	^E -239
August	4,357	2,773	7,130	198	7.7	^E 89	^E 322	^E -234
September	4,342	3,042	7,384	97	3.3	^E 72	^E 364	^E -292
October	4,342	3,116	7,458	-28	-9	^E 145	^E 229	^E -84
November	4,344	2,929	7,273	-325	-10.0	^E 322	^E 124	^E 198
December	4,340	2,375	6,715	-528	-18.2	^E 624	^E 66	^E 558
Total	4,340	2,375	6,715	-528	-18.2	^E 3,126	^E 2,679	^E 447
2003 January	^R 4,342	1,534	^R 5,876	-810	-34.5	^E 886	^E 44	^E 841
February	4,334	864	5,198	-974	-53.0	^E 723	^E 48	^E 676

^a For total underground storage capacity at the end of each calendar year, see Note 8 at end of section.

^b For 1980-2000, data differ from those shown on Table 4.1, which includes liquefied natural gas storage for that period.

^c Positive numbers indicate that withdrawals are greater than injections. Negative numbers indicate that injections are greater than withdrawals. Net withdrawals or injections may not equal the difference between applicable

ending stocks. See Note 2 at end of section.

R=Revised. E=Estimate.

Notes: • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 States and the District of Columbia.

Web Page: <http://www.eia.doe.gov/emeu/mer/natgas.html>.

Sources: See end of section.

Natural Gas

Note 1. Supplemental Gaseous Fuels: Any gaseous substance that, introduced into or commingled with natural gas, increases the volume available for disposition. Such substances include, but are not limited to, propane-air, refinery gas, coke oven gas, still gas, manufactured gas, biomass gas, or air or inert gases added for Btu stabilization.

Annual data beginning with 1980 are from the Energy Information Administration (EIA) *Natural Gas Annual (NGA)*. Unknown quantities of supplemental gaseous fuels are included in consumption data for 1979 and earlier years.

Monthly data are considered preliminary until after the publication of the EIA *NGA*. Monthly estimates are based on the annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. The ratio is applied to the monthly sum of the three elements to compute a monthly supplemental gaseous fuels figure.

Note 2. Storage: Gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals from the quantity in storage at the end of the previous period. The difference is due to changes in the quantity of native gas included in the base gas and/or losses in base gas due to migration from storage reservoirs.

Total underground storage capacity at the end of each calendar year since 1975 (first year data were available), in billion cubic feet, was:

1975 ... 6,280	1984 ... 8,043	1993 ... 7,989
1976 ... 6,544	1985 ... 8,087	1994 ... 8,043
1977 ... 6,678	1986 ... 8,145	1995 ... 7,953
1978 ... 6,890	1987 ... 8,124	1996 ... 7,980
1979 ... 6,929	1988 ... 8,124	1997 ... 8,332
1980 ... 7,434	1989 ... 8,124	1998 ... 8,179
1981 ... 7,805	1990 ... 8,125	1999 ... 8,229
1982 ... 7,915	1991 ... 7,993	2000 ... 8,241
1983 ... 7,985	1992 ... 7,932	2001 ... 8,415

Monthly underground storage data are collected from the Federal Energy Regulatory Commission (FERC) Form FERC-8 (interstate data) and EIA Form EIA-191 (intrastate data). Beginning in January 1991, all data are collected on the revised Form EIA-191. Injection and withdrawal data from the FERC-8/EIA-191 survey are adjusted to correspond to data from Form EIA-176 following publication of the EIA *NGA*.

The final monthly and annual storage and withdrawal data for 1980–2000 include both underground and liquefied natural gas (LNG) storage. Annual data on LNG additions and withdrawals are from Form EIA-176. Monthly data are estimated by computing the ratio of each month's underground storage additions and withdrawals to annual underground storage additions and withdrawals and applying the ratio to the annual LNG data.

Note 3. Balancing Item: The balancing item for natural gas represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas disposition. The differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperature and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period time frames; and imbalances resulting from the merger of data reporting systems which vary in scope, format, definitions, and type of respondents.

The increase of 0.2 trillion cubic feet (Tcf) in the "Balancing Item" category in 1983, followed by a decline of 0.5 Tcf in 1984, reflected unusually large differences resulting from the use of the annual billing cycle (essentially December 15 through the following December 14) consumption data in conjunction with calendar year supply data. Record cold temperatures during the last half of December 1983 resulted in a reported 0.3 Tcf increase in net withdrawals from underground storage for peak shaving as compared with the same period in 1982, but the effect of this cold weather was reflected primarily in 1984 consumption data. For underground storage data, see Table F2 in the May 1985 Energy Information Administration (EIA) *Natural Gas Monthly NGM*, which was published in July 1985.

Note 4. Consumption: Consumption includes pipeline fuel use, lease and plant fuel use, and deliveries to consuming sectors.

Final data for series other than "Other Industrial CHP" and "Electric Power Sector" are from the EIA *NGA*. Monthly data are considered preliminary until after publication of the EIA *NGA*. For more detailed information on the methods of estimating preliminary and final monthly data, see the EIA *NGM*.

Note 5. Consumption, 1989–1992: Prior to 1993, deliveries to nonutility generators were not separately collected from natural gas companies on Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." As a result, for 1989 through 1992, those volumes are probably included in both the industrial and electric power sectors and double-counted in total consumption. In 1993, 0.28 trillion cubic feet was reported as delivered to nonutility generators.

Note 6. Nonhydrocarbon Gases Removed: Annual data on nonhydrocarbon gases removed from marketed production—carbon dioxide, helium, hydrogen sulfide, and nitrogen—are from the EIA *NGA*. Data are not available prior to 1980. Monthly data are reported by three States and computed for six States. Monthly data are preliminary until after publication of the EIA *NGA*. Differences between annual data published in the EIA *NGA* and the sum of the preliminary monthly data (January–December) are allocated proportionally to the months to create final monthly data. For further information on methods of estimating

preliminary monthly data, see the EIA *NGM*.

Note 7. Production.

Annual data—Final annual data are from the EIA *NGA*.

Estimated monthly data—Data for the two most recent months presented are estimated. Some of the data for earlier months are also estimated or computed. For a discussion of computation and estimation procedures, see the EIA *NGM*.

Preliminary monthly data—Monthly data are considered preliminary until after publication of the EIA *NGA*. Preliminary monthly data are gathered from reports to the Interstate Oil Compact Commission and the U.S. Minerals Management Service. Volumetric data are converted, as necessary, to a standard 14.73 psi pressure base. Unless there are major changes, data are not revised until after publication of the EIA *NGA*.

Final monthly data—Differences between annual data in the EIA *NGA* and the sum of preliminary monthly data (January–December) are allocated proportionally to the months to create final monthly data.

Note 8. Extraction Loss: Extraction loss is the reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants.

Annual data are from the EIA *NGA*, where they are estimated on the basis of the type and quantity of liquid products extracted from the gas stream and the calculated volume of such products at standard conditions. For a detailed explanation of the calculations used to derive estimated extraction losses, see the EIA *NGA*.

Preliminary monthly data are estimated on the basis of extraction loss as an annual percentage of marketed production. This percentage is applied to each month's marketed production to estimate monthly extraction loss.

Monthly data are revised and considered final after the publication of the EIA *NGA*. Final monthly data are estimated by allocating annual extraction loss data to the months on the basis of total natural gas marketed production data from the EIA *NGA*.

Note 9. Imports and Exports: The United States imports natural gas via pipeline from Canada and Mexico and imports liquefied natural gas (LNG) via tanker from Algeria, Australia, Indonesia, Nigeria, Oman, Qatar, Trinidad and Tobago, and the United Arab Emirates. In addition, very small amounts of LNG arrived from Canada in 1973 (667 million cubic feet), 1977 (572 million cubic feet), and 1981 (6 million cubic feet). The United States exports natural gas via pipeline to Canada and Mexico and exports LNG via tanker to Japan. Also, small amounts of LNG have gone to Mexico since 1998.

Annual and final monthly data are from the annual EIA Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas," which requires data to be reported by month for the calendar year.

Preliminary monthly data are EIA estimates. For a discussion of estimation procedures, see the EIA *NGM*. Preliminary data are revised after the publication of the EIA *U.S. Imports and Exports of Natural Gas*.

Note 10. Forecast Values: Data values preceded by "F" in this section are forecast values. They are derived from EIA's Short-Term Integrated Forecasting System (STIFS). The model is driven primarily by data and assumptions about key macroeconomic variables, the world oil price, and weather. The natural gas forecast relies on other variables as well, such as gas wellhead prices, electric power generation by other sources, and U.S. gas import capacity. Each month, EIA staff review the model output and make adjustments, if appropriate, based on their knowledge of developments in the natural gas industry.

The STIFS model results are published monthly in EIA's *Short-Term Energy Outlook*, which is available from the National Energy Information Center (202-586-8800) and accessible on the world wide web at <http://www.eia.doe.gov>. Documentation for the model and instructions for downloading and operating it on a personal computer are provided.

Table 4.5 Sources

Storage Activity

1973-1975: Energy Information Administration (EIA) *Natural Gas Annual 1994, Volume 2*, Table 9.

1976-1979: EIA, *Natural Gas Production and Consumption 1979*, Table 1.

1980-1995: EIA, *Historical Natural Gas Annual 1930 Through 2000*, Table 11.

1996: EIA, *Natural Gas Monthly*, February 2003, Table 9.

1997 forward: EIA, *Natural Gas Monthly*, April 2003, Table 9.

Forecast values: EIA, Short-Term Integrated Forecasting System. See Note 10 on this page.

Other Data

1973 and 1974: American Gas Association (AGA), *Gas Facts, 1972 Data*, Table 57, *Gas Facts, 1973 Data*, Table 57, and *Gas Facts, 1974 Data*, Table 40.

1975 and 1976: Federal Energy Administration (FEA), Form FEA-G318-M-O, "Underground Gas Storage Report," and Federal Power Commission (FPC), Form FPC-8, "Underground Gas Storage Report."

1977 and 1978: EIA, Form FEA-G-318-M-O, "Underground Gas Storage Report," and Federal Energy Regulatory Commission (FERC), Form FERC-8, "Underground Gas Storage Report."

1979-1995: EIA, Form EIA-191, "Underground Gas Storage Report," and FERC, Form FERC-8, "Underground Gas Storage Report."

1996: EIA, *Natural Gas Monthly*, February 2003, Table 9.

1997 forward: EIA, *Natural Gas Monthly*, April 2003, Table 9.

Forecast values: EIA, Short-Term Integrated Forecasting System. See Note 10 on this page.

